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Quality of Life after Traumatic Injury: A Latent Trajectory Modeling Approach

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Key Words
Accidents · Injuries · Trauma · Quality of life · Posttraumatic stress · Latent trajectory modeling

Abstract
Background: It is largely unknown how quality of life (QoL) changes following accidental injuries. Equally, the mechanisms underlying such changes have not yet been identified in detail. This study of injured accident survivors aimed to: (1) detect a model of change which best explains the observed course of QoL, and (2) identify potential predictor variables. ***Methods:*** 323 injured accident survivors were interviewed within 2 weeks of the trauma, and followed up at 6 and 12 months. Latent trajectory modeling was used to analyze the fit of three potential trajectories regarding the observed course of general QoL as measured by the Questions on Life Satisfaction questionnaire. ***Results:*** The trajectory model adopting a negative square-root change fitted the observed data best, meaning that shortly after the accident, general QoL decreased strongly with diminishing negative changes occurring later on. Early and prolonged QoL impairment was largely attributable to the initial level of posttraumatic stress as measured by the Clinician-Administered PTSD Scale. To a lesser extent, depressive symptoms also predicted change in subjective QoL, while injury severity showed no direct effect; rather, its impact on QoL was mediated by initial posttraumatic stress. By contrast, reduced occupational functioning was attributable to injury severity rather than psychopathology. ***Conclusions:*** When treating injured accident survivors, clinicians should consider symptoms of posttraumatic stress and comorbid depression in order to prevent or mitigate negative changes in QoL.

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Introduction

Quality of life (QoL) issues have become increasingly important in health care practice and research because measures of disease status alone are insufficient to entirely capture the burden of illness. When taking a comprehensive view of patient care, measurement of QoL offers additional information [1, 2]: QoL encompasses the broader picture of an individual's life circumstances, e.g. abilities to pursue interests, cognitive functioning, perception of social relations, a sense of well-being, etc. Because of its complex and multidimensional nature, there are several conceptualizations of QoL measurement [3].

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When studying the psychosocial consequences of accidental injuries, QoL issues complement existing studies on psychiatric morbidity [4, 5], ways of coping [6, 7] or time off work [8]. Most past studies with injured patients assessed health-related QoL (HRQoL). Longitudinal studies assessing pre-injury HRQoL prospectively [9], retrospectively [10–13], or performing a comparison with population norms [14–16] found a substantial impairment in HRQoL scales 6 months to 4 years post-injury in the order of 0.3–1.0 standard deviations (SD) below pre-injury scores (estimation by H.M.). Studies assessing posttraumatic stress disorder (PTSD) symptomatology [12, 16] reported a robust and mostly strong correlation between HRQoL outcome and posttraumatic stress level. Post-injury depression predicted impaired HRQoL too [10], while injury severity [15, 16] as well as sociodemographic variables such as gender and age [11] did not appear to be consistently related to change in HRQoL.

However, what about the course of general QoL, which captures the broader psychological and social dimensions of life [3]? A better understanding of QoL trajectories and the interplay of factors potentially accounting for them could form an evidence base for clinicians' decisions regarding appropriate timing of interventions. Choosing an instrument measuring general QoL, and using latent trajectory modeling [17], the current longitudinal study aimed to find appropriate answers.

Methods

Study Design and Participants

The study was approved by the Institutional Review Board of the University of Zürich. Written informed consent was obtained from all participants. During a 12-month recruitment period, all patients who were admitted to the trauma ward of the University Hospital of Zürich because of injuries caused by an accident or an assault were screened for inclusion. Inclusion criteria were a minimum of 2 nights' hospitalization, age between 18 and 65 years, and fluency in German, Italian, Spanish, Portuguese, Serbo-Croatian, Turkish, or Albanian. Patients were excluded if they were physically unable to participate in an extensive interview within 30 days of the accident. Further exclusion resulted from signs of severe traumatic brain injury as indicated by a Glasgow Coma Scale (GCS) score <9, unconsciousness for more than 15 min, or pathological findings in a cranial CT scan. Patients injured due to attempted suicide were also excluded.

787 patients within the required age range were reported to the interviewers. Of these, 253 patients did not fulfill the selection criteria, primarily due to early discharge (104 patients; 41.1%), poor clinical condition (74; 29.2%), a GCS score <9 (46; 18.2%), language difficulties (21; 8.3%), and other reasons (29; 11.5%; multiple reasons possible). The remaining 534 patients were eligible for the study. Due to restricted interviewing capacity, 148 patients could not be approached. Of the 386 contacted patients, 335 decided to participate in the study, while 51 refused. Non-contacted and participating patients differed neither in gender (Pearson's $\chi^2 = 0.79$, d.f. = 1, n.s.) nor age (t = 0.31, d.f. = 481, n.s.). Also, the refusers did not differ significantly in gender (Pearson's $\chi^2 = 0.07$, d.f. = 1, n.s.) or age (t = –1.91, d.f. = 384, n.s.) from the participants. Limiting the sample to accident survivors resulted in the exclusion of 12 assault victims. Being exposed to and recovering from interpersonal trauma, such as a criminal assault, is psychologically different from experiencing an accident and its sequelae. Therefore, assault victims ought to be studied separately from patients who sustained accidental injuries [18].

Thus, the final sample consisted of 323 patients. The mean number of days between accident and initial assessment (T1) was 5.0 days (range = 2–28 days, SD = 4.2). Follow-up assessments took place 6 (T2), and 12 (T3) months after the accident. Two hundred and fifty-five (78.9%) patients participated in the 6-month follow-up interview. For the 12-month follow-up, all 323 patients were contacted by letter, of whom 253 (78.3%) returned the self-rating questionnaires.

Measures

QoL was assessed by the Questions on Life Satisfaction (FLZ^M) questionnaire [19]. This self-rating instrument assesses 'general life satisfaction' by examining eight life domains. The respondent rates each domain twice, once for the subjective importance of that life domain, and once for the degree of satisfaction experienced in that domain. The two ratings are combined into a weighted satisfaction score and then added up for an 8-item total score. The resulting scale, ranging from –96 through 160, covers the following life domains: friends/acquaintances, leisure time/hobbies, health, income/financial security, occupation/work, housing/living conditions, family life/children, and partner relationship/sexuality. The FLZ^M questionnaire has been tested and evaluated for its psychometrical characteristics, and standardized for the German population. It was included in this study because, as a subjective and multidimensional measurement tool of QoL, it includes weighting for the relative importance of each dimension for the individual concerned. QoL was assessed at T1, T2, and T3. At T1, participants were asked to assess their pre-accident rather than their current QoL.

Antonovsky's Sense of Coherence (SOC) questionnaire [20] was used to measure a possibly powerful health-related resource influencing QoL [21]. Test properties such as internal consistency and test-retest reliability of the SOC are excellent [22]. To minimize a bias due to the current situation at T1, participants were asked to complete this questionnaire describing their sense of coherence experienced before the accident (retrospective assessment). The 13-item short version of the SOC yielding a total mean score ranging from 1 to 7 was used.

Symptoms of posttraumatic stress were assessed by means of the validated German version [23] of the Clinician-Administered PTSD Scale (CAPS) [24]. This instrument measures the frequency and intensity of each of the 17 PTSD symptoms according to DSM-IV. The resulting CAPS total score (max range = 0–136) reflects the symptom load or level of posttraumatic stress. Because the time criterion would not have been fulfilled at T1, PTSD diagnostic status was not assessed. However, the intended dimensional analyses could be conducted using the CAPS total score instead of a PTSD diagnosis.

Depression at T1 was assessed by means of the 7-item subscale (max range = 0–21) of the Hospital Anxiety and Depression Scale (HADS) [25]. Following the standard convention [26], scores 7–10 indicate a possible clinical depression, and scores >10 indicate probable caseness.

For the assessment of immediate physical consequences of the accident, the Injury Severity Score (ISS) [27] and the GCS [28] were used. Severely injured patients usually score >15 on the ISS. Patients with severe traumatic brain injury generally score <9 on the GCS.

Patients' sociodemographic characteristics and accident-related variables were assessed during the initial interview. Furthermore, patients were asked to give a subjective appraisal of accident severity (SAS) on a 5-point Likert scale (1 = very slight to 5 = very severe). Throughout the first 6 months post-accident, patients kept a diary recording the number of sick-leave or work loss days (WLD) due to the accident. Non-German-speaking participants (39; 12.1%) were interviewed with the help of interpreters and were given professionally translated questionnaires.

Statistical Analysis

Descriptive statistics were calculated using SPSS 15.0 for Windows. The course of QoL and individual differences in QoL change over time were analyzed by means of latent trajectory modeling based on structural equation modeling [17] using Lisrel 8.8 for Windows [29]. After identifying the trajectory model that provides the best fit for the data (unconditional model), more complex conditional models including predictors and covariates may be analyzed (see online supplementary material, www.karger.com/doi/10.1159/000330887).

Five conditional models specifying different predictors/covariates of change were evaluated for model fit. These models included the association of QoL-intercept and QoL-change with WLD (model 1), gender and age (model 2), SOC (model 3), ISS and SAS (model 4), symptom load of posttraumatic stress and depression score (model 5). Finally, significant predictors derived from models with adequate model fit were included in a summarized model.

Overall, 9.4% of observations of the eleven variables included into the conditional latent trajectory modeling were missing. The approach regarding analysis of missingness [30], multiple imputation [31], and model fit evaluation [32, 33] is described in the online supplementary material, as are the internal consistencies of the psychometric instruments.

Results

Participant and Accident Characteristics

Of 323 participants, 209 (64.7%) were males. Mean age was 40.9 years (SD 12.9). Most patients (n = 236; 73.1%) were Swiss, 25 (7.7%) were German or Austrian citizens (i.e. native German speakers), 33 (10.2%) were nationals of Southern European countries, 20 (6.2%) were citizens of the Balkan States, and 9 (2.8%) from other countries. Pre-accident general QoL as measured by the FLZ^M was on average 74.1 (SD = 36.4). This value is 0.29 SD higher than the norm for Western Germany [34] (t = 5.38, d.f. = 322, $p < 0.001$). Mean sense of coherence before accident was 5.1 (SD = 0.9), i.e. similar to comparable populations [22]. Table 1 summarizes patients' characteristics.

131 participants (40.6%) were admitted to the trauma ward due to accidents involving sports and leisure time activities. Other types of accidental events included motor vehicle accidents (97; 30.0%), workplace (79; 24.5%), and household injuries (16; 5.0%). The mean ISS was moderate (11.4, SD = 9.8). Three patients (0.9%) had a GCS score between 9 and 11, 22 patients (6.8%) had a GCS score of 13 or 14, the remainder had the maximum GCS score of 15. Mean level of posttraumatic stress (13.4) and mean depression score (3.9) were quite low (table 1), while patients appraised the severity of their accident as fairly high (mean = 3.5). On average during the first 6 months post-accident patients took 94.8 days of sick leave (SD = 53.8, range = 6–183).

Table 1. Sociodemographic, pre-traumatic, and accident-related characteristics of injured accident survivors (n = 323)

	Assessment T1[a] (mean ± SD)
Female gender	35.3%
Age (years)	40.9 ± 12.9
QoL (FLZ^M)	74.1 ± 36.4[b]
Sense of coherence	5.1 ± 0.9b[b]
Injury severity score	11.4 ± 9.8
Subjective appraisal of accident severity	3.5 ± 1.0[c]
Level of posttraumatic stress (CAPS)	13.4 ± 13.6
Depression score (HADS)	3.9 ± 3.5

HADS = Hospital Anxiety and Depression Scale.

[a] The mean number of days between accident and assessment T1 was 5.0 days (range = 2–28 days; SD = 4.2).

[b] Retrospectively assessed for pre-traumatic condition.

[c] Likert scale from 1 = very slight to 5 = very severe.

Latent Trajectory Model for QoL

Half a year post-accident (T2), general QoL decreased to a mean of 62.4 (SD = 35.7). At the 1-year follow-up (T3), general QoL was on average 56.9 (SD = 37.0). Within the first half year post-accident, mean general QoL dropped by 0.32 SD (t = 7.71, d.f. = 322, $p < 0.001$) followed by a drop of 0.15 SD (t = 4.19, d.f. = 322, $p < 0.001$) within the next 6 months. The total QoL decrease of 0.47 SD corresponded to a medium effect [35]. Regarding the unconditional latent trajectory model (see online suppl. material),

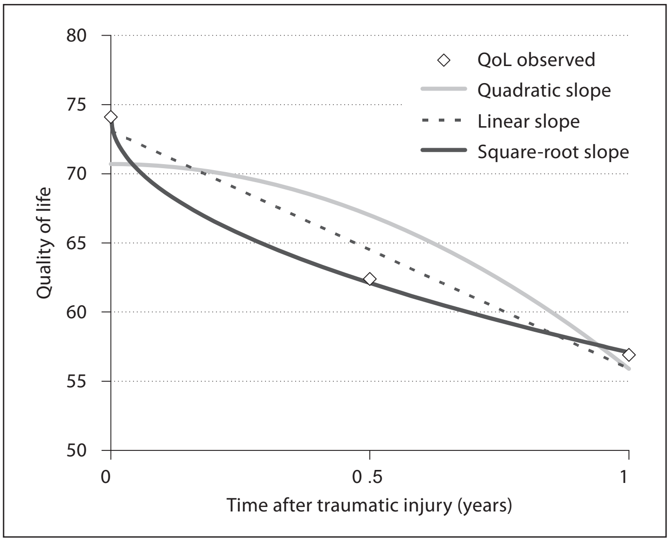

Fig. 1. QoL (observed means) over time together with the three latent trajectory models fitted (estimated means). The model with the square-root slope showed the best model fit. Observed QoL SD ranged from 35.7 to 37.0.

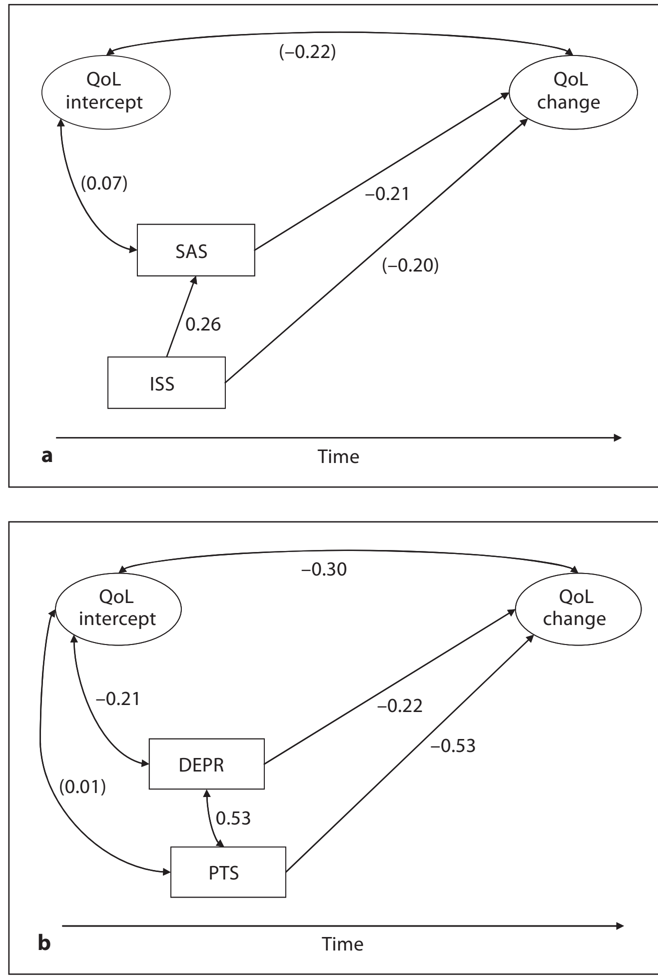

Fig. 2. Conditional latent trajectory model of QoL after traumatic injury. Intercept and change stand for latent factors of the trajectory model of QoL. All tested effects are shown. All coefficients are standardized and significant ($p \leq 0.05$) if not in parentheses. **a** Model with ISS and SAS as predictors of change. **b** Model with depression score (DEPR) and symptom load of posttraumatic stress (PTS) as predictors of change.

three different trajectory profiles (linear vs. quadratic vs. square-root change) were estimated. Figure 1 depicts the three estimated trajectories together with the means of the observed QoL data. With an excellent model fit, the square-root model fitted the data best ($\chi^2 = 2.16$, d.f. = 3, χ^2/d.f. = 0.72, p = 0.56, RMSEA = 0.005, SRMR = 0.015, NNFI = 1.00, CFI = 1.00). Because variances of intercept and change factor of QoL in this model were significant ($p < 0.05$), conditional models were tested as a next step.

Covariates and Predictors of Change in QoL

The first correlative conditional model explored the association of intercept and change with WLD. In this model, WLD did not correlate with the intercept (–0.04, n.s.), but a longer period of sick leave correlated with a strong negative change (i.e. decrease) in QoL (–0.42, $p < 0.05$). Model fit was excellent ($\chi^2 = 3.08$, d.f. = 4, χ^2/d.f. = 0.77, p = 0.56, RMSEA < 0.001, SRMR = 0.015, NNFI = 1.00, CFI = 1.00).

The second conditional model showed that gender and age did not predict the initial status (i.e. intercept; 0.02 and 0.11, respectively, n.s.) and later change of QoL (0.00 and 0.11, respectively, n.s.). Model fit was good ($\chi^2 = 6.82$, d.f. = 5, χ^2/d.f. = 1.36, p = 0.26, RMSEA = 0.03, SRMR = 0.02, NNFI = 0.99, CFI = 0.99).

In the third conditional model, SOC correlated highly with the intercept (0.55, $p < 0.05$), while SOC did not predict change in QoL (0.02, n.s.). Model fit was good (χ^2 = 3.88, d.f. = 4, χ^2/d.f. = 0.97, p = 0.46, RMSEA = 0.015, SRMR = 0.015, NNFI = 1.00, CFI = 1.00).

The fourth conditional model studied the impact of ISS and SAS on the change in QoL (fig. 2a). SAS did not correlate with initial QoL. However, higher scores in SAS predicted greater negative change in QoL. The path coefficient between ISS and QoL change was close to significance level (p = 0.051). Higher ISS itself predicted higher SAS. Model fit was acceptable ($\chi^2 = 17.4$, d.f. = 6, χ^2/d.f. = 2.93, p = 0.01, RMSEA = 0.08, SRMR = 0.05, NNFI = 0.96, CFI = 0.98).

In the fifth model depression score significantly correlated with the intercept, while posttraumatic stress did not. Depression and posttraumatic stress significantly predicted change in QoL (fig. 2b). The higher the symptom scores the greater the negative change in QoL. The symptom scores of depression and posttraumatic stress correlated strongly. Model fit was good ($\chi^2 = 9.53$, d.f. = 5, χ^2/d.f. = 1.91, p = 0.14, RMSEA = 0.05, SRMR = 0.03, NNFI = 0.99, CFI = 0.99).

The summarized conditional model included all significant predictors from the preceding conditional models. ISS was also included, because in model 4 this variable's impact on change in QoL was close to significance level and because it predicted the subjective appraisal of accident severity. Figure 3 illustrates all significant associations. Depression score correlated negatively with the intercept. Symptom load of posttraumatic stress and depression score were the only variables with a significant influence on change in QoL. Variance in posttraumatic stress explained 27.3% of variance in change of QoL. Initial status of QoL (intercept) as well as work loss days correlated negatively with change in QoL, i.e. higher initial QoL as well as greater number of work loss days were associated with a stronger negative change in QoL. Injury severity, subjective accident severity, and to a minor extent depressive symptoms predicted the number of work loss days within the first half year post-accident. Injury severity predicted SAS and posttraumatic stress, while SAS predicted depressive symptoms and posttraumatic stress. Model fit of the summarized model was good ($\chi^2 = 25.9$, d.f. = 12, χ^2/d.f. = 2.15, p = 0.02, RMSEA = 0.06, SRMR = 0.04, NNFI = 0.97, CFI = 0.99).

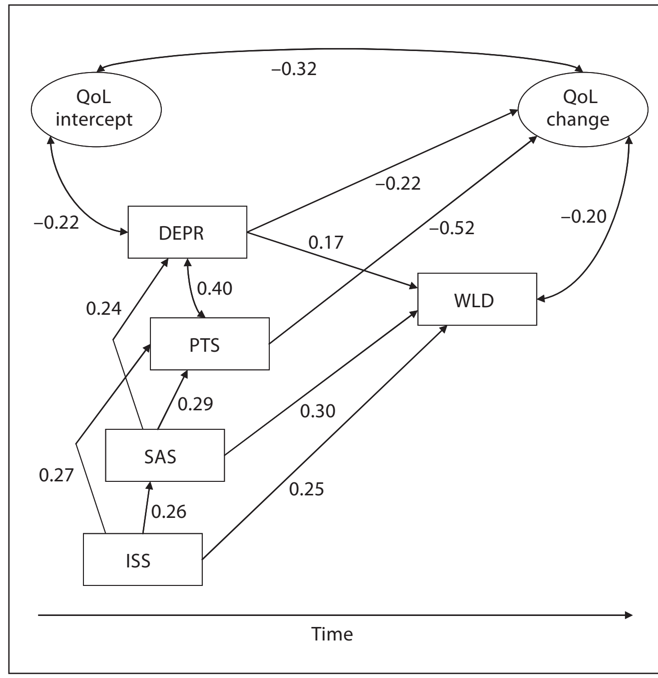

Fig. 3. Summarized conditional latent trajectory model of QoL after traumatic injury. Intercept and change stand for latent factors of the trajectory model of QoL. Only significant effects are shown, and all coefficients are standardized and significant ($p \leq 0.05$). WLD = Work loss days; DEPR = depression score; PTS = level of postraumatic stress; SAS = subjective appraisal of accident severity.

Discussion

This study investigated the change in general QoL after accidental injuries using latent trajectory modeling. The unconditional model with the negative square-root change provided an optimal fit for the empirical data – indicating that shortly after the accident QoL decreased strongly with diminishing negative changes occurring later on (fig. 1). This trajectory model suggests that after accidental injuries, an enduring QoL impairment must be assumed. The distinctive loss of general QoL within the first year post-accident is noteworthy because its magnitude is very similar to results of studies measuring the course of HRQoL. The one study comparing HRQoL 4-year post-injury with pre-injury scores found a somewhat smaller loss [9]. Studies on HRQoL with similar longitudinal designs including retrospectively assessed pre-injury HRQoL found decreases about twice as high [10, 15]. Because general QoL is a broader concept incorporating different life domains which may counterbalance each other, we expected any change to be even smaller when compared to HRQoL. Maybe the strong decrease in general QoL shortly after the accident indicates that exaggerated fears might play a major role. Patients may anticipate being less satisfied with many life domains that actually appear more important than before the accident.

Symptom load of posttraumatic stress, and to a lesser extent depressive symptoms, emerged as the strongest predictors of a negative change in general QoL after traumatic injury. Variability in initial posttraumatic stress explained more than a fourth of variability in later change in QoL. Again, this result is in line with the existing literature regarding predictors of change in HRQoL [12, 16]. Early signs of excessive stress after potentially traumatic events might indicate later difficulties in coping with obstacles in different areas of life – affecting not only

HRQoL, but also general QoL. The detailed mechanism of this generalization remains an open question. After all, compared to depressive symptoms, which are not specific to trauma, the event-related level of posttraumatic stress seems to be more important regarding the development of QoL.

Injury severity did not directly influence general QoL in a multivariate context (fig. 3). We rather found an indirect effect of injury severity on QoL change via posttraumatic stress. Injury severity also indirectly affected QoL change via the patients' subjective appraisal of accident severity, which itself impacted on posttraumatic stress as well as depression scores. It seems that the impact of accidental injuries on QoL is essentially mediated by posttraumatic stress. Reduced general life satisfaction seems to stem from implications caused by the accident, which have been transformed into psychopathological symptoms. By contrast, reduced occupational functioning as measured by work loss days seems to be the result of a mechanism related to the physical consequences of an accident. The fact that the correlation between a negative change in general QoL and more work loss days (4% shared variance) was very low points to different mechanisms leading to these outcomes. The considerable influence of patients' subjective appraisal of accident severity on the number of sick leave days has also been shown in an earlier study [8]. Moreover, initial level of posttraumatic stress did not predict sick leave, while depression did. Thus, posttraumatic stress did not influence an objective indicator of occupational functioning in the same way it affected the subjective view of life circumstances. Discrepancies between subjective QoL and objectively negative factors have been reported before [36]. In addition, our results highlight how different pathways may lead to these discrepancies, and suggest specific interventions according to each preventive goal.

While SOC and general QoL strongly correlated before the accident, pre-accident SOC failed to predict lower levels of QoL decrease in the longitudinal analysis. Higher QoL prior to the accident correlated with a stronger negative change in QoL. Hence, neither high pretraumatic QoL nor high SOC buffered a negative change in QoL after accidental injuries. This result is in contrast to findings who considered SOC a health-related resource leading to better QoL [21]. It rather corresponds to findings indicating that the buffering effect of SOC with regard to the development of chronic pain could not be shown in the long-term in injured patients [37].

A number of limitations of this study have to be considered. First, because QoL was measured only three times during the observation period, the number of latent factors estimated was limited to two [17]. Thus, possibly QoL took a more complex course with intermittent periods of temporary recovery which were not captured by our assessments. Second, the retrospective assessment of pre-traumatic conditions regarding QoL and SOC was potentially biased by a transient state shortly after the accident facing challenges to cope with the current situation. Thus, an exaggeration of the pre-traumatic situation cannot be ruled out [38]. However, general QoL and sense of coherence were only slightly associated with event-related variables, a finding which does not support the notion of a strong bias. Finally, although reliabilities do not appear to have been affected, the use of interpreters and translated psychometric instruments in a small proportion of patients may have reduced the validity of our assessments.

In conclusion, this study revealed a strong early decrease in general QoL after accidental injuries. To a lesser extent, QoL continued to decrease 6 and 12 months post-accident. This course of QoL change was mostly attributable to initial symptom load of posttraumatic stress and to severity of depression. Optimal medical care of accidental injuries might prevent functional impairment. However, accurately timed psychological interventions in patients with signs of early posttraumatic stress and comorbid depression might prevent or mitigate ongoing QoL impairment during the first year post-accident.

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Disclosure Statement

The authors have no financial conflict of interest to declare.

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Latent Trajectory Modeling (LTM) for Quality of Life

Latent trajectory modeling (LTM) permits variation between individuals regarding intercepts (initial status) and change factors in the repeatedly measured variable of interest. This type of analysis represents the search for an appropriate *unconditional model*. Because quality of life (QoL) was measured three times, only two latent factors (intercept and change) could be estimated in the unconditional model (see figure). The following individual trajectory equation provides the basis for modeling hypotheses regarding different trajectories of QoL:

$$\mathbf{y_{it} = \alpha_i + \beta_i * \lambda_t^c + \varepsilon_{it}}$$

y_{it} stands for QoL of individual i at time t, α_i is the *intercept* (i.e. baseline value) of the underlying trajectory of individual i, β_i is the *change factor* of the underlying trajectory of individual i (note that with decreasing QoL over time β_i is negative), λ_t is the value of time at t, exponent c reflects the different shapes of the trajectory, and ε_{it} is the residual for individual i at time t. Three common hypotheses about the course of QoL-change were tested: In the case of $c = 1$ (linear change) QoL is linearly related to the passage of time. In the case of $c = 2$ (quadratic change) there are small initial changes of QoL that accelerate with the passage of time. In the case of $c = 0.5$ (square-root change) there are large changes of QoL early in the trajectory that diminish later on.

To model these three forms of trajectories in LTM, change factor loadings on the repeated measures of QoL are fixed to predefined values. As an example, the figure illustrates these values for the case of the linear latent trajectory model. The loadings are 0, 0.25, 1 (i.e. 0^2, 0.5^2, 1^2) for the quadratic model, and 0, 0.71, 1 (i.e. $0^{0.5}$, $0.5^{0.5}$, $1^{0.5}$) for the square-root model. The appropriateness of the three trajectory models is evaluated by fit indices. LTM estimates for each model a mean intercept and a mean change factor by pooling data across all individuals. Thus, estimated trajectories can be contrasted with observed data (see fig. 1 of the article).

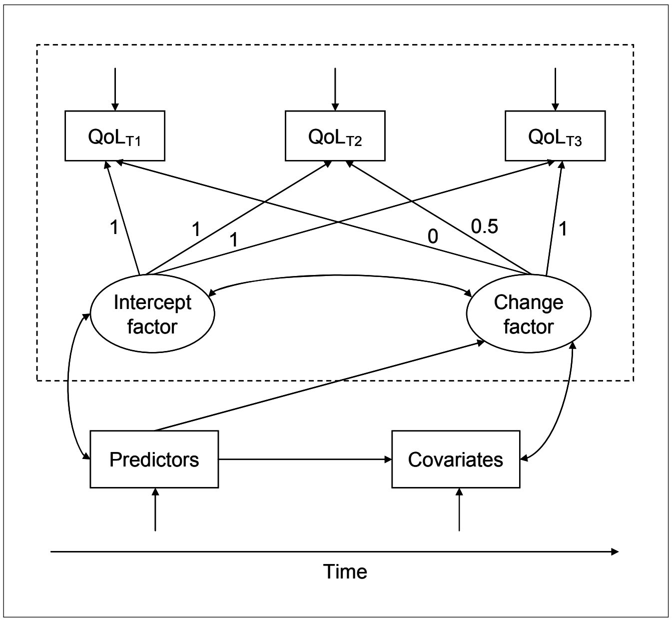

Figure. *Conditional model* of change in quality of life (QoL) including the *unconditional model* (inside of the dashed rectangle). Ellipses stand for latent, and rectangles for observed variables. Change factor loadings (0, 0.5, 1) on the repeated measures of QoL reflect a linear latent trajectory model.

If the unconditional model fits the empirical data well and the variances of intercept and change factor are statistically significant, the model is completed to attain a *conditional model* by adding predictors and covariates that predict or correlate with the initial status and the change factor.

Analysis of Missingness, Multiple Imputation, and Model Fit Evaluation

Overall, 9.4% of observations of the eleven variables included into the conditional latent trajectory modeling were missing. As analysis of missingness confirmed the assumption of data missing at random (MAR), multiple imputation was applied. Four complete data sets were imputed by the Markov Chain Monte Carlo algorithm included in the LISREL program and accordingly four structures were estimated for every model specified before. As multisample analysis indicated the absence of significant differences between the four imputed data sets, parameters and fit indices were combined and tested for significance. Model tests applied maximum likelihood (ML) estimation. Model fit to the observed data was evaluated based on a selection of fit parameters and cut-off criteria. Tests for model coefficients were two-tailed with a significance level of $p \leq .05$.

Internal Consistencies

The internal consistencies of the instruments used in this study were comparable to those reported in the literature. Cronbach's alphas were .80 for QoL (FLZ^{M}), .82 for the SOC, .77 for the CAPS, and .74 for the HADS depression score.